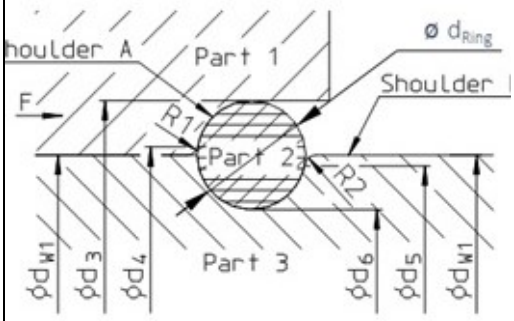
Engineering Manual

Split Ring

SULZER

DM-T-200-0002

Revision No:	0	Date:	Feb 28, 2018	Name:	M.Kulkarni
Project Name			Application Code		
Customer			Application Standard		
Tendering / OED / PD No.			Pump Designation		
Project Comments					
Component			Calc. Version No.		
3D Part or Drawing No.			Date & Name	Jan 14, 2020	kulkmit
Sheet Comments					

Figures/Sketches/Equations	Input Data			
Split Ring with round section	Split ring section		Round section	
	Flow 1)	Q =	m^3/s	0.000
	Speed 1)	n =	rpm	0
	Head 1)	H =	m	0.00
	Design temperature	T_D =	°C	0.00
	Axial load	F =	N	0
	Diameter	d_{W1} =	mm	0.0
		R_1 =	mm	0.2
		R_2 =	mm	0.5
$d_{w1} + 2 \cdot R_1$	Diameter	d_4 =	mm	0.4
$d_{w1} - 2 \cdot R_2$	Diameter	d_5 =	mm	-1.0
	Safety factor bearing stress	SF_P =		1.1
	Safety factor shear stress	SF_S =		1.5
	Output Data			
	Part 1			
	Material			
	Material standard			
	Yield strength at T_D	S_{Y1} =	N/mm^2	0.00
S_{Y1} / SF_p	Allowable stress	P_{all1} =	N/mm^2	0.00
	Part 2 (Split ring)			
	Material			
	Material standard			
	Yield strength at T_D	S_{Y2} =	N/mm^2	0.00
S_{Y2} / SF_p	Allowable stress	P_{all2} =	N/mm^2	0.00
$\frac{S_{Y2}}{SF_S}\frac{1}{\sqrt{3}}$	Allowable shear stress	τ_{all2} =	N/mm^2	0.00
$\mathrm{Min}\,(P_{all1}, P_{all2})$	Min. value shoulder A	P_{allA} =	N/mm^2	0.00
	Part 3			
	Material			
	Material standard			
	Yield strength at T_D	S_{Y3} =	N/mm^2	0.00
S_{Y3} / SF_p	Allowable stress	P_{all3} =	N/mm^2	0.00
$\mathrm{Min}\,(P_{all2}, P_{all3})$	Min. value shoulder B	P_{allB} =	N/mm^2	0.00
	Shoulder A			

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F/P_{allA}	Required bearing area	$A_A =$	mm^2	
$\sqrt{d_4^2 + 4 \cdot A_A / \pi}$	Required inner diameter	$d_3 =$	mm	
	Selected diameter	$d_{3sel} =$	mm	0.0
$d_{3sel} \geq d_3$	Check:		NOT FULFILLED!	
$(4 \cdot F) / \pi(d_{3sel}^2 - d_4^2)$	Existing bearing stress	$p_{vorA} =$	N/mm^2	0.00
$P_{allA} \geq P_{vorA}$	Check:		OK	
	Shoulder B			
F/P_{allB}	Required bearing area	$A_B =$	mm^2	
$\sqrt{d_5^2 - 4 \cdot A_B / \pi}$	Required outer diameter	$d_6 =$	mm	
	Selected diameter	$d_{6sel} =$	mm	0.0
$d_{6sel} \leq d_5$	Check:		NOT FULFILLED!	
$(4 \cdot F) / \pi(d_5^2 - d_{6sel}^2)$	Existing bearing stress	$p_{vorB} =$	N/mm^2	0.00
$P_{allB} \geq P_{vorB}$	Check:		OK	
	Split Ring Diameter d_{Ring}			
$\frac{d_{3Sel} - d_{6Sel}}{2}$	Selected ring diameter	$d_{Ring,sel} =$	mm	0.0
$\frac{F}{\tau_{all2} \cdot \pi \cdot d_{w1}}$	Minimum ring diameter	$d_{Ring,min} =$	mm	
$d_{Ring,min} \leq d_{Ring,Sel}$	Check:		NOT FULFILLED!	

References / Notes

1) For information only